UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:
HSE-5J

DATE: SEP 20 1994

SUBJECT: ACTION MEMORANDUM - Request for a Time-Critical Removal Action at the David Chemical Site, Chicago, Cook County, Illinois (Site ID# XG)

FROM: Peter Guria, On-Scene Coordinator
Emergency and Enforcement Response Branch - Section 2

TO: William E. Muno, Director
Waste Management Division

THRU: Jodi Traub, Associate Division Director
Office of Superfund F. Karl for

I. PURPOSE

The purpose of this Memorandum is to obtain your approval to expend up to $ 830,375 to mitigate threats to human health and the environment posed by the presence of uncontrolled hazardous substances (chromic and acetic acid, caustic materials with pH values ranging between <1.0-9.9, and flammable liquids) located at the David Chemical site (DC), 4650 West 5th Avenue, Chicago, Cook County, Illinois. The proposed action is being taken pursuant to Section 104 (a)(1) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, by removing acid, base, flammable, organic and inorganic solids and liquids contained in drums and small containers. It is estimated that the removal action will require 90 on-site working days to complete. The proposed removal action is a time-critical removal due to conditions at the site.

The site is not on the National Priorities List (NPL).

II. SITE CONDITIONS AND BACKGROUND

CERCLIS ID# IL 0000382119

A. Physical Location

The DC site is located at 4650 West 5th Avenue, Chicago, Cook County, Illinois. The site is situated in a light industrial/residential area with 5th Avenue defining the site's southern boundary and consists of a small one story cinder block building.

The facility is bordered immediately to the west by a small fenced area containing barricade materials and Kilpatrick Avenue, and to the north by a narrow alleyway which separates the site from a barricade manufacturer. A rail yard is located some distance south of 5th Avenue. Residential homes are located approximately 60 yards to the northwest along Arthington Street, and Sumner Elementary school is located 3 blocks to the east. The population within one square city block is approximately 200.

B. Site Description and Background

The DC site is currently owned by a private citizen who accepted spent plating waste to produce cleaning agents. According to the owner, operations began sometime in 1987 and included the manufacturing of cleaning chemicals and detergents for the plating, automatic car wash, and portable toilet industries. DC utilized sodium bisulfate, chromic acid, chlorinated compounds, and industrial dyes and perfumes in the manufacturing of cleaning agents. Phosphates, chlorinated compounds, and sodium nitrate were utilized in the production of detergents. Fluoroboric acid was reportedly used to adjust the pH of the cleaning agents. The chromic acid was obtained from an electroplating company located in Fox Lake, IL. The manufacturing of electroplating cleaners was discontinued in 1993; however, manufacturing of detergents for car wash operators and portable toilet companies continued until September 1993.

On April 8, 1993, personnel from the Chicago Fire Department, Chicago Department of Environment (CDE), and Metropolitan Water Reclamation District (MWRD) responded to a release of an unknown liquid from the facility. An orange substance was observed migrating from under a garage door facing 5th Avenue and a green liquid was seen running along the curb side of the street toward the sewer. The site owner stated that the roof of the building leaked and that fiber drums containing barium sulfate and trisodium phosphate were damaged by rain water and had released the material. The fire department's HAZMAT Team cordoned off the affected area of the street and advised the facility owner of proper cleanup procedures. The HAZMAT Team then entered the building and observed numerous drums containing surfactants and phosphates.

On July 15, 1993, an environmental contractor for the Illinois Environmental Protection Agency (IEPA) conducted a Resource Conservation and Recovery Act (RCRA) inspection of the electroplating facility located in Fox Lake, Illinois. The inspector was informed by facility representatives that the David Chemical Company picked up and transported the facility's spent chrome plating solution. When contacted by the IEPA contracted inspector, a David Chemical representative stated that nitric and sulfuric acid are added to the spent solution to raise the chrome level for use as iridescent chromate in cadmium plating.

The DC representative stated that this process had been used for years.

On August 18, 1993, IEPA, accompanied by the Illinois State Police Department (ISP), conducted a sampling and inspection at the DC site. No representative of David Chemical was present and the facility appeared to be closed. Numerous 55-gallon drums were observed outside a bay door at the southeast corner of the building. A green colored liquid was observed migrating from the bay door to the sidewalk. The bay door was partially open; however, a locked steel security gate prevented entry. Several drums and small containers could be seen inside the building along with trash and debris. IEPA personnel collected two samples of the green liquid and soil from the sidewalk area. Analytical results of these samples revealed a Toxicity Characteristic Leachate Procedure (TCLP) chromium level of 831 parts per million (ppm).

On September 4, 1993, personnel from the IEPA, ISP, and MWRD executed a search warrant at the DC site for the purpose of collecting samples and conducting an inspection for possible RCRA violations. A representative of David Chemical was present to facilitate access to drums and containers located inside the building. A total of four drum and two floor samples were collected for laboratory analysis. Drums and containers were found to be stored in a hap-hazard fashion. Some appeared to be laying on their sides and in various stages of deterioration. Laboratory results of drum and floor samples indicated TCLP levels of chromium ranging between 330 and 4,082 milligrams per liter (mg/l), and TCLP levels of lead between 26 and 85 mg/l.

On May 27, 1994, the U.S. EPA Emergency and Enforcement Response Branch (EERB) conducted a site assessment of the DC site to evaluate threats posed to human health and the environment. The U.S. EPA On-Scene Coordinator (OSC) and Technical Assistance Team (TAT) conducted air monitoring and collected solid and liquid samples from drums, small containers, and material from the floor of the facility. Approximately 300 55-gallon drums were observed throughout the site, many open and in various stages of deterioration, stacked two and three rows high upon pallets. Labels on some of the drums indicated acids, caustics, and flammable compounds. An unknown number of small containers (five gallons or less) and bagged materials were also found throughout the facility in various states of deterioration. The roof of the building was observed to be in extremely poor condition, with large gaping holes above areas containing drums and paper bags of material.

Air monitoring results inside the building indicated volatile organic vapor ranging between 4.5 and 12.6 ppm in the breathing zone. A total of seven samples were collected from drums, small containers, plastic bags, and from the floor of the facility.

Analytical results revealed the presence of elevated levels of chromium (120,000 to 24,000 ppm), polynuclear aromatic hydrocarbons (PNAs), [ranging from 380 to 100 ppm], volatile organic compounds (VOCs), [methylene chloride at 12,200 ppm], and flammable liquids (flashpoint 115°F). Liquids present in some of the drums had pH values at <1.0 and 10 standard units.

C. Current Site Conditions

Access to the site is somewhat restricted by a locked personnel door and gated and locked overhead garage doors; however, according to the property owner, trespass occurs quite frequently through the roof of the building. Approximately 300 drums containing acids, caustics, and flammable liquids have been observed throughout the facility. Numerous small containers and bagged materials containing caustics and flammable materials have also been observed. Many of these drums, bags, and containers are in extremely poor condition, many open or deteriorating rapidly. Rainwater enters the facility through large openings in the roof and has damaged the containers sufficiently enough to release their contents.

Toxicity Characteristic Leachate Procedure (TCLP) analysis of solid samples collected by IEPA and U.S. EPA from drums and the floor of the facility revealed high levels of chromium ranging from 330 to 276,000 ppm and lead ranging from 26 to 86 ppm. These samples also exhibited pH values from <1.0 to 10 standard units. Two samples collected from drummed liquids were found to contain total chromium levels of 120,000 ppm and 24,000 ppm. One drum was found to contain a flammable liquid with a flashpoint of 115°F. The analytical results of the liquid and solid material indicate the presence of characteristic corrosive, ignitable, and toxicity characteristic wastes under the RCRA of 1976, as amended, and 40 CFR 261.21, 40 CFR 261.22, and 40 CFR 261.24.

D. Other actions to date.

The State of Illinois is currently pursuing criminal charges against the owner of the DC site for the improper storage, handling, and disposal of RCRA wastes. In addition, the IEPA has been conducting regular surveillance of the DC site to ensure that the site has remained secure.

The proposed cleanup activities in this Action Memorandum have been discussed in detail with Mark Retzlaff of the IEPA.

III. THREAT TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

Conditions at the DC site present a release, and potential threat of release, of a CERCLA hazardous substance, threatening to public health, or welfare, or the environment based upon factors set forth in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR 300.415 (b)(2). These factors include:

a) actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants;

This factor is present at the facility due to the presence of corrosive and toxic liquids and solids found in drums and small containers. Label information on drums found on site indicate the presence of strong acids such as: chromic, fluoroboric, acetic, and hydrofluoric acids; as well as caustic sodium hydroxide. Drums containing flammable liquids, glycol ether and mineral spirits were also observed. Analytical results of samples collected from drums, small containers, and the floor of the facility have revealed TCLP chromium levels ranging from 330 to 276,000 ppm and TCLP lead levels ranging from 26 to 86 ppm. Elevated levels of volatile organic compounds such as methylene chloride (12,200 ppm), 1,1,1-trichloroethane (265 ppm), and toluene (165 ppm) are also present.

The high concentrations of the above materials exhibit the characteristics of corrosivity and toxicity of hazardous wastes under RCRA, 40 CFR 261.22, and 40 CFR 261.24, and are hazardous substances under section 101(14) of CERCLA. Chromic acid is a human carcinogen that can be absorbed through all routes of exposure, resulting in severe nose and throat irritation and stomach or kidney ailments. Contact with strong acids can result in severe skin or eye burns, and irritation to the nose, throat and respiratory tract. Volatile organic materials pose inhalation, ingestion, and direct contact hazards which can result in irritation to the respiratory tract, eyes, and skin. The facility owner has stated that trespass and vandalism regularly occur through the roof of the building. The corrosive and toxic nature of the acid, caustic liquids, and solids present direct contact, ingestion, and inhalation threats to public health should unauthorized access continue. The site is bordered by commercial businesses and private residences to the northwest.

b) hazardous substances or pollutants or contaminants in drums barrels, tanks, or other bulk storage containers that may pose a threat of release;

This factor is present at the facility due to the existence of drums and small containers of acid, caustic, and toxic liquids and solids. Approximately over 300 drums and small containers have been identified throughout the facility, many open and in various states of deterioration. Drums have been observed stacked two and three high in an overcrowded portion of the building. Label information indicates corrosive and flammable liquids and/or solid material. Field sampling of some of the drums has indicated pH values ranging from <1.0 to 10.

The severely deteriorated and vandalized roof has numerous large holes resulting in continued exposure to the natural elements. One hole, approximately 20 feet by 20 feet in size, is situated directly above drums containing mineral spirits and hydrofluoric acid. On one occasion rainwater entering the facility through the roof caused several fiber drums to become damaged and release material. The drummed material combined with chromic acid sludge present on the floor resulted in a response from the CFD and MWRD to contain the release from the facility. Analytical results of a sample collected by the IEPA from the material which had migrated to 5th Avenue revealed TCLP chromium above 4,000 ppm. During the U.S. EPA site assessment, air monitoring conducted inside the building documented elevated levels of VOCs in the breathing zone, indicating the potential for a continued release of material from the facility. The present state of the facility's roof increases the potential for a release of material from the drums.

c) weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;

This factor is present at the facility due to the continued vandalism and deterioration of the building's roof. Open drums containing acids, caustics, and flammable materials have been documented on site. If the building's roof is allowed to remain in its present condition, continued exposure of the drums and containers to the natural elements could accelerate deterioration and release their contents. On one occasion personnel from the CFD and MWRD have responded to the site to contain a release of chromic acid sludge which had migrated to the city sewer system. Additionally, deterioration of the drums and containers could result in mixing and migration of incompatible materials such as chromic acid, sodium hydroxide, calcium hypochlorite, and other volatile organic compounds.

d) threat of fire and explosion;

This factor is present at the facility due to the presence of drums and small containers of flammable liquids. Analytical results of samples collected from drums revealed liquids with a flashpoint of 115°F, exhibiting the characteristic of ignitability under RCRA 40 CFR 261.21. Several five gallon containers labelled as flammable isopropyl alcohol have also been observed at the facility. The site is not in continuous operation and vandalism is common. Should unauthorized access to the building continue, the potential for arson remains high.

e) the unavailability of other appropriate Federal or State response mechanisms to respond to the release;

This factor supports the actions proposed by this Memorandum at the facility because neither the IEPA nor the City of Chicago have the necessary resources, or clean up contractor mechanisms in place, to respond to this time-critical situation.

IV. ENDANGERMENT DETERMINATION

The current site conditions, the presence of drums and containers of acids, caustics, volatile organic compounds, heavy metals, and flammable liquids pose serious threats to human health and the environment through direct contact, ingestion, inhalation, or fire and explosion should a release occur. Chromium and lead exhibit the characteristic of toxicity under 40 CFR 261.24 (D007, D008) flammable liquids found at the site exhibit the characteristic of ignitability under 40 CFR 261.21, and drums containing liquids with pH values of <1.0 exhibit the characteristic of corrosivity under 40 CFR 261.22, and all are hazardous substances under section 101(14) of CERCLA. Access is restricted by locked doors, but on several occasions the facility has been vandalized by gaining access through the roof. The roof of the building is in such a severe state of deterioration that on several occasions rainwater has damaged containers and caused a release of material to migrate outside the facility. The actual or threatened releases of these hazardous substances, if not addressed by implementing the response action proposed in this Action Memorandum, may present a threat of exposure to heavy metals, volatile organic compounds, and flammable liquids, and a potential threat of release to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

The purpose of this removal action is to mitigate the threats posed to public health, or welfare, or the environment by the presence of deteriorating and/or leaking drums and containers of flammable, acidic, caustic, and organic/inorganic liquids and

solids. Removal activities at the site are to include: sampling and characterization of all drums, small containers, and floor material; consolidation of all characterized hazardous substances and wastes; decontamination of emptied drums and building walls and floors; and, disposal of all characterized wastes identified and generated during removal activities.

Specifically, the following activities are proposed:

1) Develop and implement site health, safety and security measures;

2) Develop and implement an air monitoring program during site activities;

3) Sample, characterize, consolidate, and secure all liquid and solid material found in drums, bags, pits, floor sumps, and small containers;

4) Decontaminate and/or dispose of all RCRA-empty drums, bags, and small containers;

5) Decontaminate all affected building walls, floors, and floor sumps, and conduct sampling to determine that elevated levels of hazardous substances and contaminants are below U.S. EPA action levels; and

6) Transport and dispose of all characterized or identified hazardous substances, pollutants, wastes, or contaminants at a RCRA/CERCLA-approved disposal facility in accordance with the U.S. EPA Off-Site Rule 58 F.R. 49200, effective October 22, 1993.

Removal activities will require approximately 90 on-site working days to complete. The threat posed by the presence of drums and small containers of acids and caustics (pH range: <1.0-9.9), flammable liquids (f.p. 115° F), volatile organic compounds (methylene chloride 12,000 ppm), and heavy metals (chromium 120,000-24,000 ppm) meet the criteria listed in Section 300.415(b)(2) of the NCP and are consistent with any long-term remedial action which may be required.

The OSC has begun planning for the provision of post-removal site control, consistent with the provisions of Section 300.415(k) of the NCP. The nature of the removal, elimination of all air and surface threats, is, however, expected to eliminate the need for post-removal site control.

The detailed cleanup contractor costs are presented in Attachment 1 and estimated project costs are summarized below:

EXTRAMURAL COSTS	
Cleanup Contractor	$ 470,000
Contingency (15%)	70,500
Subtotal	540,500
Total TAT, including multiplier costs	108,000
Extramural Subtotal	$ 648,500
Extramural Contingency (15%)	97,275
TOTAL, EXTRAMURAL COSTS:	$ 745,775
INTRAMURAL COSTS:	
U.S. EPA Direct Costs $30/hr x (900 Regional + 90 HQ hrs)	$ 29,700
U.S. EPA Indirect Costs $61/hr x (900 Regional hrs)	54,900
TOTAL, INTRAMURAL COSTS	$ 84,600
TOTAL REMOVAL PROJECT CEILING ESTIMATE	$ 830,375

The response actions described in this Memorandum directly address actual or threatened releases of hazardous substances, pollutants, or contaminants at the facility which may pose direct contact, inhalation, and migration threats to public health and safety and to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

Applicable or Relevant and Appropriate Requirements (ARARS)

All applicable, relevant, and appropriate requirements (ARARS) will be complied with to the extent practicable. Federal ARARS for this site include RCRA. As the materials being dealt with are likely to be RCRA characteristic wastes, they will be handled accordingly. To the degree materials are treated on-site, treatment will meet RCRA land disposal restrictions found in 40 CFR Part 268. To the degree materials are sent off site, RCRA manifesting requirements will be complied with.

The materials will be sent to an acceptable RCRA treatment, storage, and/or disposal facility pursuant to the U.S. EPA Off-Site Rule.

A letter has been sent to Mr. Mark Retzlaff of the Illinois Environmental Protection Agency (IEPA) requesting that IEPA identify State ARARS. Any State ARARS identified in a timely manner for this removal action will be complied with to the extent practicable.

VI. CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED

Given the site conditions, the nature of the hazardous substances documented on site, and the potential exposure pathways to nearby populations described in sections II and III above, actual or threatened releases of hazardous substances from the DC site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

VII. ENFORCEMENT

For administrative purposes, information concerning confidential enforcement strategy for this site is contained in the Confidential Enforcement Addendum.

VIII. RECOMMENDATION

This decision document represents the selected removal action for the David Chemical site, located in Chicago, Cook County, Illinois and developed in accordance with CERCLA, as amended by SARA, and not inconsistent with the NCP. This decision is based upon the Administrative Record for the site. Attachment 2 identifies the items that comprise the Administrative Record upon which the selection of the removal is based.

Because the conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action, your approval of this request is recommended. The estimated total project costs are $830,375, of which up to $637,775 may be used for cleanup contractor costs. You may indicate your decision by signing below:

APPROVE: Wm. E. Muno DATE 9/20/94
Director
Waste Management Division

DISAPPROVE: _____ DATE _____
Director
Waste Management Division

Enforcement Addendum
Attachments
1. Detailed Cleanup Contractor Cost
2. Administrative Record Index

cc: E. Watkins, U.S. EPA, 5202-G
L. Eastep, Illinois Environmental Protection Agency
D. Henne, U.S. Department of the Interior

bcc: A. Baumann, HSRL-5J
R. Karl, HSE-5J
J. Cisneros, HSE-5J
O. Warnsley, CRU, HSRLT-5J
T. Lesser, P-19J
F. Myers, MF-10J
EERB Read File (M. Johnson)
EERB Delivery Order File (M.Gustafson)
EERB Site File (Char Gwizdala, SF Central File Room)
Contracting Officer, MC-10J
P. Guria, HSE-5J
L. Beasley, HSE-5J
B. Warning, CM-29A

ENFORCEMENT ADDENDUM

Redacted - not relevant to the selection of the removal action.

ATTACHMENT 1

DETAILED CLEANUP CONTRACTOR COST ESTIMATE
DAVID CHEMICAL SITE
CHICAGO, COOK COUNTY, ILLINOIS
AUGUST 1994

ERCS Personnel	$ 20,000
ERCS Equipment and Materials	100,000
ERCS Subcontractors	25,000
Sampling and Analytical	25,000
Transportation and Disposal	300,000
TOTAL	$ 470,000

ATTACHMENT 2

ADMINISTRATIVE RECORD INDEX
DAVID CHEMICAL SITE
CHICAGO, COOK COUNTY, ILLINOIS
AUGUST 1994

DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
04/08/93	Seaholm, D., City of Chicago, MWRD	Chicago Dept. of Environment	Special Investigation/ Incident Report	2
07/20/93	Schlichting,T., PRC, Environmental Management	Retzlaff, M., IEPA, DCI	Memorandum	1
08/18/93	Retzlaff, M., IEPA, DCI	IEPA File	RCRA Inspection and sample results	10
09/04/93	Retzlaff, M., IEPA, DCI	IEPA File	RCRA Inspection report and sampling results	20
09/14/93	Retzlaff, M., IEPA, DCI	Gould, C., IEPA, BOL/FOS	Memorandum	1
07/11/93	Ecology & Environment	Nabasny,G., U.S. EPA	Site Assessment	82
00/00/93	Guria, P. U.S. EPA, EERB	Muno, W., U.S. EPA, WMD	Action Memorandum	15